AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) An apparatus for identifying a concentration of a urea of a urea solution, comprising:

a urea concentration identifying chamber for causing an identified urea solution introduced into a urea concentration identifying apparatus body to stay temporarily;

a urea concentration identifying sensor heater provided in the urea concentration identifying chamber; and

a liquid temperature sensor provided in the urea concentration identifying chamber apart from the urea concentration identifying sensor heater at a constant interval;

the urea concentration identifying sensor heater including a heater and an identifying liquid temperature sensor provided in the vicinity of the heater, and

the apparatus further comprising an identification control portion for applying a pulse voltage to the urea concentration identifying sensor heater for a predetermined time, heating the identified urea solution staying temporarily in the urea concentration identifying chamber by the heater and identifying the concentration of the urea with a voltage output difference V0 corresponding to a temperature difference between an initial temperature and a peak temperature in the identifying liquid temperature sensor.

2. (Original) The apparatus for identifying a concentration of a urea of a urea solution according to claim 1, wherein the voltage output difference V0 is equal to a voltage difference between an average initial voltage V1 obtained by sampling an initial voltage before application of the pulse voltage at a predetermined number of times and an average peak voltage V2 obtained by sampling a peak voltage after the application of the pulse voltage at a predetermined number of times, that is,

$V0 = V2 - V1$.

3. (Currently Amended) The apparatus for identifying a concentration of a urea of a urea solution according to claim 1 ~~or 2~~, wherein the identification control portion identifies a concentration of a urea of a urea solution with the voltage output difference V0 obtained for the identified urea solution based on calibration curve data to be a correlation of a voltage output

difference with a temperature for a predetermined reference urea solution prestored in the identification control portion.

4. (Currently Amended) The apparatus for identifying a concentration of a urea of a urea solution according to ~~any of claims 1 to 3~~claim 1, wherein the identification control portion correlates a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and thus carries out a correction.

5. (Currently Amended) The apparatus for identifying a concentration of a urea of a urea solution according to ~~any of claims 1 to 3~~claim 1, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

6. (Currently Amended) The apparatus for identifying a concentration of a urea of a urea solution according to ~~any of claims 1 to 5~~claim 1, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

7. (Currently Amended) The apparatus for identifying a concentration of a urea of a urea solution according to ~~any of claims 1 to 6~~claim 1, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

8. (Original) A method for identifying a concentration of a urea of a urea solution, comprising the steps of:

applying a pulse voltage for a predetermined time to a urea concentration identifying sensor heater including a heater and an identifying liquid temperature sensor provided in the vicinity of the heater;

heating an identified urea solution by the heater; and

identifying the concentration of the urea with a voltage output difference V0 corresponding to a temperature difference between an initial temperature and a peak temperature in the identifying liquid temperature sensor.

9. (Original) The method for identifying a concentration of a urea of a urea solution according to claim 8, wherein the voltage output difference V0 is equal to a voltage difference between an average initial voltage V1 obtained by sampling an initial voltage before

application of the pulse voltage at a predetermined number of times and an average peak voltage V2 obtained by sampling a peak voltage after the application of the pulse voltage at a predetermined number of times, that is,

$$V0 = V2 - V1.$$

10. (Currently Amended) The method for identifying a concentration of a urea of a urea solution according to claim 8~~ or 9~~, wherein a concentration of a urea of a urea solution is identified with the voltage output difference V0 obtained for the identified urea solution based on calibration curve data to be a correlation of a voltage output difference with a temperature for a predetermined reference urea solution which is prestored.

11. (Currently Amended) The method for identifying a concentration of a urea of a urea solution according to ~~any of claims 8 to 10~~claim 8, wherein a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution is correlated with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and is thus corrected.

12. (Currently Amended) The method for identifying a concentration of a urea of a urea solution according to ~~any of claims 8 to 11~~claim 8, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

13. (Currently Amended) The method for identifying a concentration of a urea of a urea solution according to ~~any of claims 8 to 12~~claim 8, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

14. (Currently Amended) The method for identifying a concentration of a urea of a urea solution according to ~~any of claims 8 to 13~~claim 8, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

15. (Currently Amended) An apparatus for reducing an exhaust gas of a car, comprising:

a urea solution supplying mechanism for supplying a urea solution to an upstream side of a catalytic device,

wherein the urea solution supplying mechanism is constituted by a urea solution tank for storing the urea solution, a urea pump and a urea spraying device for spraying the urea solution fed from the urea pump to the upstream side of the catalytic device, and

the apparatus for identifying a concentration of a urea of a urea solution according to ~~any of claims 1 to 7~~claim 1 is provided in the urea tank or on an upstream side or a downstream side of the urea pump.

16. (Currently Amended) A method for reducing an exhaust gas of a car, comprising the steps of:

supplying a urea solution to an upstream side of a catalytic device through a urea solution supplying mechanism constituted by a urea solution tank for storing the urea solution, a urea pump and a urea spraying device for spraying the urea solution fed from the urea pump onto the upstream side of the catalytic device, and

identifying a concentration of a urea of the urea solution in the urea tank or on an upstream side or a downstream side of the urea pump by using the method for identifying a concentration of a urea of a urea solution according to ~~any of claims 8 to 14~~claim 8.

17. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 2, wherein the identification control portion identifies a concentration of a urea of a urea solution with the voltage output difference V0 obtained for the identified urea solution based on calibration curve data to be a correlation of a voltage output difference with a temperature for a predetermined reference urea solution prestored in the identification control portion.

18. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 2, wherein the identification control portion correlates a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and thus carries out a correction.

19. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 3, wherein the identification control portion correlates a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and thus carries out a correction.

20. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 2, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

21. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 3, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

22. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 4, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

23. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 2, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

24. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 3, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

25. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 4, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

26. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 5, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

27. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 2, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

28. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 3, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

29. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 4, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

30. (New) The apparatus for identifying a concentration of a urea of a urea solution according to claim 5, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

31. (New) The method for identifying a concentration of a urea of a urea solution according to claim 9, wherein a concentration of a urea of a urea solution is identified with the voltage output difference V0 obtained for the identified urea solution based on calibration curve data to be a correlation of a voltage output difference with a temperature for a predetermined reference urea solution which is prestored.

32. (New) The method for identifying a concentration of a urea of a urea solution according to claim 9, wherein a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution is correlated with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and is thus corrected.

33. (New) The method for identifying a concentration of a urea of a urea solution according to claim 10, wherein a liquid type voltage output Vout for the voltage output difference V0 at a measuring temperature of the identified urea solution is correlated with an output voltage for a voltage output difference at a measuring temperature for a predetermined threshold reference urea solution and is thus corrected.

34. (New) The method for identifying a concentration of a urea of a urea solution according to claim 9, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

35. (New) The method for identifying a concentration of a urea of a urea solution according to claim 10, wherein the urea concentration identifying sensor heater is a laminated

urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

36. (New) The method for identifying a concentration of a urea of a urea solution according to claim 11, wherein the urea concentration identifying sensor heater is a laminated urea concentration identifying sensor heater in which a heater and an identifying liquid temperature sensor are laminated through an insulating layer.

37. (New) The method for identifying a concentration of a urea of a urea solution according to claim 10, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

38. (New) The method for identifying a concentration of a urea of a urea solution according to claim 11, wherein the heater and the identifying liquid temperature sensor in the urea concentration identifying sensor heater are constituted to come in contact with the identified urea solution through a metallic fin, respectively.

39. (New) The method for identifying a concentration of a urea of a urea solution according to claim 10, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.

40. (New) The method for identifying a concentration of a urea of a urea solution according to claim 11, wherein the liquid temperature sensor is constituted to come in contact with the identified urea solution through the metallic fin.